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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Reissue Applicant: EMS Control Systems International  
Original Inventors: Scholten, et al.  
Original Patent No.: 5,450,999  
Issue Date: September 19, 1995  
Title: VARIABLE SYSTEM INCLUDING  
ENVIRONMENTAL MANAGEMENT SYSTEM  
INCLUDING A FUZZY LOGIC SYSTEM

Honorable Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

REISSUE DECLARATION BY INVENTORS AND POWER OF ATTORNEY

We, the undersigned, declare and state as follows:

1. Jean Henry Albert Scholten is an Australian citizen residing at 4116 Williams Court, Tarrant County, Grapevine Texas, 76151.

2. Anno Johannes Scholten is an Australian citizen residing at 2428 Brittany Lane, Grapevine, Tarrant County, Texas 76051.

3. We believe we are the original, first and joint inventors of the subject matter that is claimed and for which a reissue patent is sought on the invention entitled Variable Air Volume Environmental Management System Including a Fuzzy

Logic Control System, the specification of which is attached hereto.

4. We have reviewed and understand the contents of the subject specification, including the claims and amendments made thereto as referred to hereinbelow and submitted herewith.

5. We acknowledge the duty to disclose information that is material to the examination of this application in accordance with 37 C.F.R. § 1.56.

6. On information and belief, United States Patent No. 5,450,999 (the "999" Patent) from which a reissue patent is sought herein, is partly inoperative or invalid because of certain errors made without any deceptive intent, due to inadvertence and mistake, by virtue of the patent claiming less than we had a right to claim in the patent.

7. On information and belief, the present reissue application seeks to enlarge the scope of the claims of the "999" Patent.

8. We did not fully appreciate the true scope of the invention disclosed in the patent until after allowance of the patent. This error occurred due to assumptions that we made regarding the extent and scope of the prior art compared to our invention.

9. In the original application, the claims included a limitation directed towards a damper which controls the volume

of air passing from an air terminal. The damper adjusts air flow according to instructions received from a fuzzy logic control mechanism. The fuzzy logic control mechanism determines incremental damper positions by comparing a sensed temperature measurement with a temperature setpoint to determine an airflow setpoint, and by adjusting the damper position based upon a comparison of the airflow setpoint and a sensed airflow measurement.

10. The damper is not required to define a variable air volume control system that is patentable over the prior art to the "999" Patent. During prosecution of the "999" Patent, we mistakenly believed that a damper was necessary to define the invention over the prior art. We were mistaken in our belief because, prior to our invention, it was not known to use a fuzzy logic control mechanism to control an environment associated with an air terminal. The damper limitation in the claims of the "999" Patent therefore was not necessary to define patentable subject matter. This misunderstanding on the patentability of the subject matter in Applicant's specification arose without any deceptive intent on our part because we failed to appreciate that the claims did not embrace the full scope of our invention.

11. Claim language regarding using the present invention to control an environment by varying the amount of air through an air terminal is not required to patent the current invention over the prior art of the "999" Patent. The current invention applies to controlling an environment by varying the flow of media other than air, as well as varying the flow of air. For example, at Col. 7 lines 59-68 and Col. 8 lines 1-4

the "999" Patent discusses one embodiment of the current invention whereby the invention controls the flow of water through coils. This misunderstanding on the patentability of the subject matter in Applicant's specification arose without any deceptive intent on our part because we failed to appreciate that the claims did not embrace the full scope of our invention.

12. New claims 43-48 include independent Claims 43 and 46. Independent Claim 43 recites a controller for an environmental control system. Independent Claim 46 recites a method for controlling an environment. These independent claims broaden the protection of the "999" Patent by eliminating the damper limitation, adding language regarding controlling an actuator, and eliminating the claim language regarding the use of the invention to control air flow through a terminal. Dependent Claims 44-45 and 47-48 regard using the present invention to move an actuator by sending an offset signal to the actuator or by moving the actuator to a defined new position. Support for precise control by the present invention is found in the discussion of an embodiment at Col. 17, lines 18-38. Furthermore, Claims 44-45 and 47-48 depend from the independent claims and are thus allowable as further describing the inventive concept.

We hereby appoint

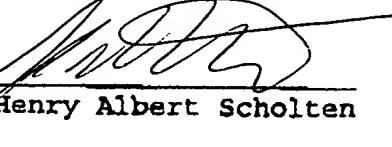
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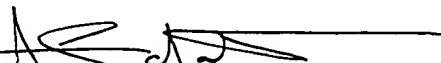
all of the firm of Baker & Botts, L.L.P., as my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, and to file and prosecute any international patent applications filed thereon before any international authorities.

12. I hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the

United States Code and that willful false statements may jeopardize the validity of the application or any patent issuing thereon.

By:   
Jean Henry Albert Scholten

Dated: 17 SEP 97

By:   
Anno Johannes Scholten

Dated: 18 SEP '97